

Trading Period	Trade	Seller	Resale Value	Price Per Customer	Customers	Total Price	Earnings = Resale Value – Total Price
1	1	1	40		x 20		
	2	2	70				
	3	3	90				
	.Fixed Costs						- 25
	TOTAL						

1. Suppose you placed a bid to buy from Seller 2 at a price of 2.0 per customer. **If** that bid is accepted, what would be your earnings on the trade?
2. If that is your only trade, what would be your total profits?
3. Suppose that Seller 3 offered an **ask** of 3.0 per customer to you. If you accepted the ask, what would be your earnings on the trade?
4. If Seller 3's third party payment was 50 for the trade, what would have been **Seller 3's** earnings on the trade?
5. How many times may you trade with each seller in a period?

RAISE YOUR HAND WHEN FINISHED.

Period zero will be a practice period. You will receive no earnings for this practice period. If you have any questions, please raise your hand and I will come by to answer your question(s).

Are there any questions?

## Experiment Instructions – Sellers (Cap, MFN)

### I. Procedures and Market Description

You are about to participate in an experiment in the economics of market decision making in which you will earn money based on the decisions you make. Your earnings are yours to keep and will be paid to you in cash at the end of the experiment. During the experiment all units of account will be in experimental dollars. Upon conclusion of the experiment, all experimental dollars earned will be converted into U.S. dollars at the conversion rate of \_\_\_\_\_ U.S. dollars per experimental dollar. Your earnings, plus a lump sum amount of \$7, will be paid to you in private. You are not allowed to communicate with the other participants. If you have any questions, please raise your hand and I will answer them in private.

In this market experiment you will have the opportunity to buy and/or **sell** a set of fictitious assets. The assets are “fictitious” in that they only exist in the context of the experiment. You will be assigned, at the beginning of the experiment, a “bidder” number and a role as either a buyer or a seller. To simulate the financial benefits of acquiring an asset, buyers will be assigned a guaranteed “resale” value for each asset. The level of the resale value assigned to any buyer is related to the buyer’s “size,” which is measured by the number of customers it serves. The larger the buyer, the higher its assigned resale value for an asset. Resale values may differ across assets for a given buyer. The following table ranks buyers included in the experiments from largest to smallest and provides the number of customers served.

<b>Buyer</b>	<b>Customers (Size Rank)</b>
7	42 (1)
9	14 (2)
5	11 (3)
6	9 (4)
8	6 (5)

In a given trading period a seller may conduct trades with multiple buyers. In each trading period the largest buyer (i.e., Buyer 7) is guaranteed to receive the lowest price from the sellers with whom it trades. Specifically, if Buyer 7 agrees on a price that is higher than the price the seller agrees to conduct a trade with another buyer, Buyer 7 is guaranteed to receive the lower price.

Sellers will be assigned a particular asset and a schedule of payments that a third party provides to them in the event of a trade between a seller and a buyer. The larger the buyer, the higher the third-party payment. Buyers have the opportunity to purchase an asset from different sellers, but each buyer is limited to making three trades per trading period. Sellers have the opportunity to sell their respective assets to multiple buyers. Both buyers and sellers will be assigned a previously incurred “fixed cost” for participating in the market, which are different for each buyer and for each seller.

You are a SELLER in this experiment. From this point forward you will be referred to by your seller number, which is seller number \_\_\_\_\_. There are **four** sellers and **five** buyers in your market.

## II. Earnings

Participants have the opportunity to conduct trades during a series of independent trading periods. Buyers earn money by: (1) purchasing assets at prices below their assigned resale value for those assets; and (2) having the sum of these earnings exceed their assigned fixed cost. Sellers earn money by selling their assigned assets to one or more buyers at prices that, when combined with a third party payment, exceed their assigned fixed cost. The following section describes how you calculate your earnings.

### 1. Instructions for Sellers

Each seller has the opportunity to **sell** a single asset to each of the five buyers (labeled Buyer 5, 6, 7, 8, and 9). Before the trading period, you will be assigned an asset and a fixed cost. You are not permitted to reveal your assigned fixed cost to anyone. The asset is “non-depletable” in that its sale to one buyer does not diminish the amount of the

asset available for sale to another buyer. Therefore, you are free to **sell** your asset to one or more buyers. However, you may trade with each buyer only once in a trading period.

The sale of your asset to any buyer conveys a financial benefit to a third party, a portion of which is transferred to you in the form of a fixed payment, the exact level of which is known only by you. This third party payment augments the revenue you may obtain **from** selling your asset to a buyer. The following table shows an example of the third party payments you receive if you trade with a particular buyer. The larger **the** buyer, the higher the third party payment.

Buyer	Third Party Payment
<b>7</b>	70
<b>9</b>	50
<b>5</b>	40
6	30
<b>8</b>	<b>22</b>

If you **sell** your asset to a buyer, your earnings from the trade **are** equal to the sale price plus the third-party payment. That is:

$$\text{TRADE EARNINGS} = \text{SALE PRICE} + \text{THIRD PARTY PAYMENT}$$

Suppose, for example, that you are assigned a fixed cost of 200 experimental dollars. Suppose, Buyer **7**, the largest buyer, agrees to pay you 10 experimental dollars per customer served (10/customer), or a total of **420** experimental dollars for your asset. Your earnings on this trade are equal to:

$$\text{TRADE EARNINGS} = 420 (10/\text{customer} * 42 \text{ customers}) + 70 = 490.$$

Your total profits in any trading period are equal to the sum of your earnings from all trades minus your fixed cost.

$$\text{TOTAL PROFITS} = \text{SUM OF TRADE EARNINGS} - \text{FIXED COST}$$

Suppose that during the same trading period you traded with Buyer 9 and that your assigned third party payment for this trade is 50 experimental dollars. If Buyer 9 agrees to pay you 12 experimental dollars per customer, or a total of 168 experimental dollars for your asset, your earnings from this trade are 218 experimental dollars:

$$\text{TRADE EARNINGS} = 168(12/\text{customer} * 14 \text{ customers}) + 50 = 218.$$

Your current total profits in the trading period are:

$$\text{SUM OF TRADE EARNINGS} = 490 + 218 = 708 \text{ experimental dollars}$$

$$\text{TOTAL PROFITS} = 708 - 200 = 508 \text{ experimental dollars}$$

The record sheet shown below shows the transactions. Please use the enclosed record sheet to calculate and record your earnings during each trading period.

Trading Period	Trade	Buyer	Customers	Price Per Customer	Trade Price	+ Third Party	= Earnings
1	1	7	42	10	420	70	490
	2	9	14	12	168	50	218
	3	5	11			40	
	4	6	9			30	
	5	8	6			22	
	- Fixed Costs						- 200
	<b>TOTAL</b>						<b>508</b>

Suppose that during the same trading period you agree to sell your asset to Buyer 8 for 8.0 experimental dollars per customer, or a total of 48 experimental dollars. Your earnings on this trade are equal to 70 experimental dollars. However, the price of this

trade, expressed on an experimental dollar per customer basis, is lower than the price initially agreed to by Buyer 7, the largest buyer. According to the rules of the market, you must give this low per customer price to Buyer 7. The following record sheet records your revised total earnings.

Trading Period	Trade	Buyer	Customers	Price Per Customer	Trade Price	+ Third Party	= Earnings
1	1	7	42	<del>10</del> (8.0)	<del>420</del> (336)	70	<del>490</del> (406)
	2	9	14	12.0	168	50	218
	3	5	11			40	
	4	6	9			30	
	5	8	6	8.0	48	22	70
	- Fixed Costs						- 200
	<b>TOTAL</b>						<b>508 (494)</b>

A comparison of the two record sheets shows that a trade with Buyer 8 at a price of 8.0 experimental dollars per customer results in a reduction in your earnings since you are required to provide Buyer 7, the largest buyer, the low per customer price you provided Buyer 8. In this example, the earnings you made from the trade with Buyer 8 was less than the earnings you lost from assigning Buyer 7 the per customer price you assigned to Buyer 8.

Finally, you incur a loss in a trading period if the sum of your trade earnings does not exceed your fixed costs. You begin the experiment with \_\_\_\_\_ experimental dollars in working capital. If your losses ever exceed this assigned amount, you will be paid your \$7 show up fee and will be asked to leave the experiment.

## 2. Information on Buyers

Each buyer has the opportunity to buy a single asset from each of the four sellers (labeled Seller 1, 2, **3**, and 4). While buyers can conduct a trade with any given seller during a trading period, they are limited to **3** trades in a given period. That is, a buyer is unable to conduct a trade with all **sellers** in a given trading period. Buyer earnings from a trade are equal to the difference between their resale value for that asset and the price paid for the asset. That is:

$$\text{TRADE EARNINGS} = \text{RESALE VALUE} - \text{PURCHASE PRICE}$$

While you do not know the exact size of the resale value any buyer receives, you can reasonably infer that the larger the size of the buyer, the higher the buyer's resale value.

### 111. Trading Process

(NOTE: A COMPUTER SCREEN **SHOT IS PROVIDED FOR YOUR REFERENCE**)

Trading occurs in a series of independent trading days or periods. Each period will last **6** minutes. Buyers and **sellers** have the opportunity to conduct a set of trades through a series of bilateral negotiations. A buyer may submit a bid to buy a particular seller's asset by entering a bid into the computer and identifying to whom the bid is offered. Each bid can be sent to only ONE seller, and only that seller will **see** the bid. A bid indicates that the buyer is willing to accept any price at or below that amount. Similarly, a seller may submit offers to sell its asset to a particular buyer by entering an asking price ("ASK") into the computer and identifying to whom the ask is offered. A **seller** can place an ASK by typing an ask amount in the "Price" box located in the center of the screen and typing the number of the buyer (5, 6, 7, **8**, or 9) to whom the ask is offered in the "Offered To" box located immediately below the Price box. A seller submits the ask by pressing the "PLACE ASK" button. Each ask can be sent to only ONE

buyer, and only that buyer will **see** the bid. **An** ask indicates that the **seller** is willing to sell at any price at or above that amount.

A buyer can accept an initial ask, or a seller can accept an initial bid. The bids and asks can be seen on the right hand corner of the screen. Your submitted asks are in the lower right hand corner along with the identity of the buyers to whom they are offered. The bids that have been offered to you by various buyers can be **seen** in the upper right hand corner along with the identity of buyer making the offer. **As** a seller, you accept a bid by highlighting the bid you wish to accept with your mouse and then pressing the “sell” button. If neither an initial bid nor an ask is accepted, a buyer may increase its standing bid and/or a **seller** may decrease its standing offer. A buyer’s revised bid must exceed its standing bid to that seller, while a seller’s revised offer must be lower than its standing ask to that buyer. **As** long as the period is open, participants are allowed to submit as many bids and asks as they like. If either side accepts one of the bids or asks, the two participants complete a trade at the designated price and should record the trade on their record sheet. Once you have traded with a particular **seller** in a period, you may not trade with that **seller** again during this period.

Information on completed trades can be seen in the upper center portion of the screen and in the lower left hand corner of the screen. The upper center portion reports the most recent trade you have completed and the lower **left** hand corner shows all trades this period. It is important for you to pay attention to these screens as a buyer may accept one of your asks resulting in a trade with you.

To make **sure** you understand the instructions, please complete the following exercise. Once you are finished (or if you have a question). raise your hand and someone will come by to help you.

Consider the following customer, third party payment, and fixed cost information.



Trading Period	Trade	Buyer	Customers	Price Per Customer	Trade Price	+ Third Party	= Earnings
<b>1</b>	<b>1</b>	<b>7</b>	<b>30</b>			<b>10</b>	
	<b>2</b>	<b>9</b>	<b>20</b>			<b>9</b>	
	<b>3</b>	<b>5</b>	<b>10</b>			<b>5</b>	
	<b>- Fixed Costs</b>						<b>- 150</b>
	<b>TOTAL</b>						

1. Suppose you submitted an ask of 6.0 per customer to Buyer 9. If that ask was accepted, what would your earnings be on the trade?
2. If that was your only trade, what would **be** your total profits?
3. Suppose Buyer 7 offered a bid of 3.0 per customer to you. If you accepted the bid, what would **be** your earnings on the trade?
4. If Buyer 7's resale value was 125, what would be Buyer **8's** earnings on the trade?
5. Suppose Buyer 5 offered a bid of 2.0 per customer to you. If you accepted the bid, would you have to re-calculate your earnings on your trade with Buyers 7?
6. What would **be** your revised earnings from a trade with Buyer
7. How many times may you trade with each buyer in a period?

RAISE YOUR HAND WHEN FINISHED.

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Period zero will **be** a practice period. You will receive no earnings for this practice period. If you have any questions, please raise your hand and I will come by to answer your question(s).

Are there any questions?

## Experiment Instructions – Buyers (Cap, No MFN)

### I. Procedures and Asset Description

You are about to participate in an experiment in the economics of market decision making in which you will earn money based on the decisions you make. Your earnings are yours to keep and will be paid to you in cash at the end of the experiment. During the experiment all units of account will be in experimental dollars. Upon conclusion of the experiment, all experimental dollars earned will be converted into U.S. dollars at the conversion rate of \_\_\_\_\_ U.S. dollars per experimental dollar. Your earnings, plus a lump sum amount of \$7, will be paid to you in private. You are not allowed to communicate with the other participants, except as permitted under the rules of the experiment. If you have any questions, please raise your hand and I will answer them in private.

In this market experiment you will have the opportunity to buy and/or **sell** a set of fictitious assets. The assets are “fictitious” in that they only exist in the context of the experiment. You will be assigned, at the beginning of the experiment, a “bidder” number and a role as either a buyer or a **seller**. To simulate the financial benefits of acquiring an asset, buyers will be assigned a guaranteed “resale” value for each asset. Resale values may differ across assets for a given buyer and may differ across buyers. Buyers will also be assigned a previously incurred “fixed cost” for participating in the market. These fixed costs may differ among buyers. At the beginning of the experiment **sellers will be** assigned a particular asset and a previously incurred “fixed cost” from creating that asset. These fixed costs may differ among sellers. Sellers will also be assigned a schedule of payments that a third party provides them in the event of a trade between a seller and a buyer.

Buyers have the opportunity to purchase an asset from different **sellers**, while sellers have the opportunity to **sell** their respective assets to multiple buyers. From this point forward, you will be referred to by your bidder number, which is bidder number \_\_\_\_\_. You are a BUYER in this experiment. There are four sellers and five buyers in your market.

## II. Earnings

Participants have the opportunity to conduct trades during a series of independent trading periods. Buyers earn money by: (1) purchasing assets at prices below their assigned resale value for those assets and (2) having the sum of these earnings exceed their assigned fixed cost. **Sellers** earn money by selling their assigned assets to one or more buyers at prices that when combined with a third party payment, exceed their fixed cost. The following section describes how you calculate your earnings.

### 1. Instructions for Buyers

Each buyer has the opportunity to buy an asset from one or more sellers. The market includes four **sellers** (labeled Seller 1, **2**, 3, and 4). You will be assigned a resale value for the asset sold by each **seller**. You are strictly prohibited from revealing your resale values to anyone. While you can conduct a trade with any **seller** during a trading period, you may only complete **3** trades in a given period. You may trade with a particular seller only once in a trading period. If you buy an asset, your earnings from the trade are equal to the difference between your resale value for that asset and the price you paid for the asset. That is:

$$\text{TRADE EARNINGS} = \text{RESALE VALUE} - \text{PURCHASE PRICE}$$

Suppose, for example, that you traded with Seller 1 and that your assigned resale value for the purchased asset is **644** experimental dollars. If you pay 300 experimental dollars for a trade with Seller **1**, then your earnings are:

$$\text{TRADE EARNINGS} = 644 - 300 = 344 \text{ experimental dollars}$$

Your total profits in any trading period are equal to the sum of your earnings from all trades minus your fixed cost.

$$\text{TOTAL PROFITS} = \text{SUM OF TRADE EARNINGS} - \text{FIXED COST}$$

For example, suppose your fixed cost was 110. Suppose that during the same trading period you traded with Seller 2 and that your assigned resale value for the purchased asset is 120 experimental dollars. If you pay 70 experimental dollars, then your total earnings in that trading period are:

$$\text{SUM OF TRADE EARNINGS} = 344 + 50 = 394 \text{ experimental dollars}$$

$$\text{TOTAL PROFITS} = 394 - 110 = 284 \text{ experimental dollars}$$

The following record sheet, which you should always use to calculate and record your earnings from each trade, displays your total earnings in this trading period.

Trading Period	Trade	Seller	Resale Value	- PRICE	= Earnings
	1	1	644	300	344
	2	2	120	70	50
	3				
	4				
	-Fixed Costs				-110
	<b>TOTAL</b>				<b>284</b>

You incur a loss on any particular trade if the price you paid for an asset exceeds your assigned resale value for that asset. You incur a loss in a trading period if the sum of your trade earnings is **less** than your fixed costs. You begin the experiment with \_\_\_\_\_ experimental dollars in working capital. If your losses **ever** exceed that amount, you will be paid your \$7 show up fee and you will **be** asked to leave the experiment.

## 2. Information on **Sellers**

Each seller has the opportunity to sell a single asset to each of the five buyers (labeled Buyer **5, 6, 7, 8**, and **9**). Each asset is “non-depletable” in that its sale to one buyer does not diminish the amount of the asset available for sale to another buyer. Therefore, **sellers** are free to **sell** to one or more buyers. However, sellers may trade with each buyer only once in a trading period.

The **sale** of an asset to any buyer conveys a financial benefit to a third party, a portion of which is transferred to the **seller** in the form of a fixed payment the level of which is known only by the **seller**. This third party payment augments the revenue the **seller** obtains from selling the asset to a buyer.

Seller earnings from a trade are equal to the sale price, augmented by the third-party payment. That is:

$$\text{TRADE EARNINGS} = \text{SALE PRICE} + \text{THIRD PARTY PAYMENT}$$

While you do not know the exact size of the third party payment any **seller** receives, you can reasonably infer that sellers for whom you have a higher **resale** value are likely to have higher third party payments, and sellers **from** whom you have a lower resale value are likely to have lower third party payments.

## III. Trading Process

(NOTE: A COMPUTER SCREEN SHOT IS PROVIDED FOR YOUR REFERENCE)

Trading occurs in a series of independent trading days or periods. Each period will last 5 minutes. Buyers and sellers have the opportunity to conduct a set of trades through a series of bilateral negotiations. A buyer may submit a bid to buy a particular seller's asset by entering a bid into the computer and identifying to whom the bid is offered. A buyer can place a bid by typing a bid amount in the “Price” box located in the center of the screen and typing the number of the **seller** (**1, 2, 3**, or **4**) to whom the bid is

offered in the “Offered To” box located immediately below the Price box. A buyer submits the bid by pressing the “PLACE BID” button. Each bid can be sent to only ONE **seller**, and only that **seller** will see the bid. A bid indicates that the buyer is willing to accept any price at or below that amount. Similarly, a seller may submit offers to sell its asset to a particular buyer by entering an asking price (“ASK”) into the computer and identifying to whom the ask is offered. Each ask can be sent to only ONE buyer, and only that buyer will see the bid. An ask indicates that the seller is willing to sell at any price at or above that amount

A buyer can accept an initial ask, or a seller can accept an initial bid. The bids and asks can be seen on the right hand corner of the screen. The bids placed by you are in the upper right hand corner along with the identity of the sellers to whom they are offered. The asks that have been offered to you by various **sellers** can be seen in the lower right hand corner along with the identity of seller making the offer. As a buyer, you accept an ask by highlighting the ask you wish to accept with your mouse and then pressing the “buy” button. If neither an initial bid nor an ask is accepted, a buyer may increase its standing bid and/or a **seller** may decrease its standing offer. A buyer’s revised bid must exceed its standing bid to that seller, while a **seller’s** revised offer must be lower than its standing ask to that buyer. As long as the period is open, participants are allowed to submit as many bids and asks as they like. If either side accepts one of the bids or asks, the two participants complete a trade at the designated price and should record the trade on their record sheet. Once you have traded with a particular seller in a period, you may not trade with that seller again during this period.

Information on completed trades can be seen in the upper center portion of the screen and in the lower **left** hand corner of the screen. The upper center portion reports the most recent trade you have completed and the lower **left** hand corner shows all trades this period. It is important for you to pay attention to these screens as a **seller** may accept one of your bids resulting in a trade with you.

In order to make sure you understand the instructions, please complete the following exercise. Once you are finished (or if you have a question), raise your hand and someone will come by to help you.

Consider the following resale values and fixed costs:

<b>Fixed Costs</b>	<b>25</b>
<b>Seller</b>	<b>Resale Value</b>
<b>1</b>	30
<b>2</b>	40
<b>3</b>	50
<b>4</b>	70

1. Suppose you placed a bid to buy from Seller 2 at a price of **12**. If that bid is accepted, what would be your earnings on the trade?
2. If that is your only trade, what would be your total profits?
3. Suppose that Seller 3 offered an ask of 44 to you. If you accepted the ask, what would be your earnings on the trade?
4. If Seller 3's third party payment was 120 for the trade, what would have been Seller 3's earnings on the trade?
5. How many times may you trade with each seller in a period?

**RAISE YOUR HAND WHEN FINISHED.**

Period zero will be a practice period. You will receive no earnings for this practice period. If you have any questions, please raise your hand and I will come by to answer your question(s).

**Are** there any questions?



## Experiment Instructions – Sellers (Cap, No MFN)

### I. Procedures and Market Description

You are about to participate in an experiment in the economics of market decision making in which you will earn money based on the decisions you make. Your earnings are yours to keep and will be paid to you in cash at the end of the experiment. During the experiment all units of account will be in experimental dollars. Upon conclusion of the experiment, all experimental dollars earned will be converted into U.S. dollars at the conversion rate of \_\_\_\_\_ U.S. dollars per experimental dollar. Your earnings, plus a lump sum amount of \$7, will be paid to you in private. You are not allowed to communicate with the other participants. If you have any questions, please raise your hand and I will answer them in private.

In this market experiment you will have the opportunity to buy and/or **sell** a set of fictitious assets. The assets are “fictitious” in that they only exist in the context of the experiment. You will be assigned, at the beginning of the experiment, a “bidder” number and a **role** as either a buyer or a **seller**. To simulate the financial benefits of acquiring an asset, buyers will be assigned a guaranteed “resale” value for each asset. The level of the resale value assigned to any buyer is related to the buyer’s “size,” which is measured by the number of customers it **serves**. The larger the buyer, the higher its assigned resale value for an asset. Resale values may differ across assets for a given buyer. The following table ranks buyers included in the experiments from largest to smallest and provides the number of customers served.

Buyer	Customers ( <i>Sue</i> Rank)
<b>7</b>	<b>42 (1)</b>
<b>9</b>	<b>14 (2)</b>
<b>5</b>	<b>11 (3)</b>
<b>6</b>	<b>9 (4)</b>
<b>8</b>	<b>6 (5)</b>

In a given trading period a seller may conduct trades with multiple buyers. In each trading period the largest buyer (i.e., Buyer 7) is guaranteed to receive the lowest price from the sellers with whom it trades. Specifically, if Buyer 7 agrees on a price that is higher than the price the seller agrees to conduct a trade with another buyer, Buyer 7 is guaranteed to receive the lower price.

Sellers will be assigned a particular asset and a schedule of payments that a third party provides to them in the event of a trade between a seller and a buyer. The larger the buyer, the higher the third-party payment. Buyers have the opportunity to purchase an asset from different **sellers**, but each buyer is limited to making three trades per trading period. **Sellers** have the opportunity to **sell** their respective assets to multiple buyers. Both buyers and **sellers** will be assigned a previously incurred “fixed cost” for participating in the market, which are different for each buyer and for each **seller**. You **are** a **SELLER** in this experiment. From this point forward you will be referred to by your seller number, which is seller number \_\_\_\_\_. There are four **sellers** and five buyers in your market.

## II. Earnings

Participants have the opportunity to conduct trades during a series of independent trading periods. Buyers earn money by: (1) purchasing assets at prices below their assigned resale value for those assets; and (2) having the sum of these earnings exceed their assigned fixed cost. **Sellers** earn money by selling their assigned assets to one or more buyers at prices that, when combined with a third party payment, exceed their assigned fixed cost. The following section describes how you calculate your earnings.

### 1. Instructions for **Sellers**

Each seller has the opportunity to sell a single asset to each of the five buyers (labeled Buyer 5, **6**, 7, 8, and 9). Before the trading period, you will be assigned an asset and a fixed cost. You are not permitted to reveal your assigned fixed cost to anyone. The asset is “non-depletable” in that its sale to one buyer does not diminish the amount of the

asset available for sale to another buyer. Therefore, you are free to sell your asset to one or more buyers. However, you may trade with each buyer only once in a trading period. The sale of your asset to any buyer conveys a financial benefit to a third party, a portion of which is transferred to you in the form of a fixed payment, the exact level of which is known only by you. This third party payment augments the revenue you may obtain from selling your asset to a buyer. The following table shows an example of the third party payments you receive if you trade with a particular buyer. The larger the buyer, the higher the third party payment.

Buyer	Third Party Payment
7	70
9	50
5	40
6	30
8	22

If you sell your asset to a buyer, your earnings from the trade are equal to the sale price plus the third-party payment. That is:

$$\text{TRADE EARNINGS} = \text{SALE PRICE} + \text{THIRD PARTY PAYMENT}$$

Suppose, for example, that you are assigned a fixed cost of **200** experimental dollars. Suppose, Buyer 7, the largest buyer, agrees to pay you 10 experimental dollars per customer served (10/customer), or a total of 420 experimental dollars for your asset. Your earnings on this trade **are** equal to:

$$\text{TRADE EARNINGS} = 420 \text{ (10/customer * 42 customers)} + 70 = 490.$$

Your total profits in any trading period are equal to the sum of your earnings from all trades minus your fixed cost.

$$\text{TOTAL PROFITS} = \text{SUM OF TRADE EARNINGS} - \text{FIXED COST}$$

Suppose that during the same trading period you traded with Buyer 9 and that your assigned third party payment for this trade is 50 experimental dollars. If Buyer 9 agrees to pay you 12 experimental dollars/customer, or a total of 168 experimental dollars for your asset, your earnings from this trade are 218 experimental dollars:

$$\text{TRADE EARNINGS} = 168 (12/\text{customer} * 14 \text{ customers}) + 50 = 218$$

Your current total profits in the trading period are:

$$\text{SUM OF TRADE EARNINGS} = 490 + 218 = 708 \text{ experimental dollars}$$

$$\text{TOTAL PROFITS} = 708 - 200 = 508 \text{ experimental dollars}$$

The record sheet shown below shows the transactions. Please **use** the enclosed record sheet to calculate and record your earnings during each trading period.

Trading Period	Trade	Buyer	Customers	Price Per Customer	Trade Price	+ Thud Party	= Earnings
1	1	7	42	10	420	70	490
	2	9	14	12	168	50	218
	3	5	11			40	
	4	6	9			30	
	5	8	6			22	
	- Fixed Costs						- 200
	TOTAL						508

Suppose that during the same trading period you agree to sell your asset to Buyer 8 for 8.0 experimental dollars per customer, or a total of 48 experimental dollars. Your earnings on this trade are equal to 70 experimental dollars. However, the price of this trade, expressed on an experimental dollar per customer basis, is lower than the price initially agreed to by Buyer 7, the largest buyer. According to the rules of the market, you must give this low per customer price to Buyer 7. The following record sheet records your revised total earnings.

Trading Period	Trade	Buyer	Customers	Price Per Customer	Trade Price	+ Thud Party	= Earnings
1	1	7	42	10 (8.0)	420 (336)	70	490 (406)
	2	9	14	12.0	168	50	218
	3	5	11			40	
	4	6	9			30	
	5	8	6	8.0	48	22	70
	- Fixed Costs						- 200
	<b>TOTAL</b>						<b>508 (494)</b>

A comparison of the two record sheets shows that a trade with Buyer 8 at a price of 8.0 experimental dollars per customer results in a reduction in your earnings since you are required to provide Buyer 7, the largest buyer, the low per customer price you provided Buyer 8. In this example, the earnings you made from the trade with Buyer 8 was less than the earnings you lost from assigning Buyer 7 the per customer price you assigned to Buyer 8.

Finally, you incur a loss in a trading period if the sum of your trade earnings does not exceed your fixed costs. You begin the experiment with \_\_\_\_\_ experimental dollars in working capital. If your losses ever exceed this assigned amount, you will be paid your \$7 show up fee and will be asked to leave the experiment.

## 2. Information on Buyers

Each buyer has the opportunity to buy a single asset from each of the four sellers (labeled **Seller** 1, 2, 3, and 4). While buyers can conduct a trade with any given seller during a trading period, they are limited to 3 trades in a given period. That is, a buyer is unable to conduct a trade with all sellers in a given trading period. Buyer earnings from a trade are equal to the difference between their resale value for that asset and the price paid for the asset. That is:

$$\text{TRADE EARNINGS} = \text{RESALE VALUE} - \text{PURCHASE PRICE}$$

While you do not know the exact size of the resale value any buyer receives, you can reasonably infer that the larger the size of the buyer, the higher the buyer's resale value.

## III. Trading Process

(NOTE: A COMPUTER SCREEN SHOT IS PROVIDED FOR YOUR REFERENCE)

Trading occurs in a series of independent trading days or periods. Each period will last 6 minutes. Buyers and **sellers** have the opportunity to conduct a **set** of trades through a series of bilateral negotiations. A buyer may submit a bid to buy a particular seller's asset by entering a bid into the computer and identifying to whom the bid is offered. Each bid can be sent to only ONE **seller**, and only that seller will **see** the bid. A bid indicates that the buyer is willing to accept any price at or below that amount. Similarly, a seller may submit offers to sell its asset to a particular buyer by entering an asking price (**'ASK'**) into the computer and identifying to whom the ask is offered. A seller can place an ASK by typing an **ask** amount in the "Price" box located in the center of the screen and typing the number of the buyer (5, 6, 7, 8, or 9) to whom the ask is offered in the "Offered To" box located immediately below the Price box. A seller

submits the ask by pressing the “**PLACE A S K**” button. Each ask can be sent to only ONE buyer, and only that buyer will *see* the bid. **An** ask indicates that the seller is willing to **sell** at any price at or above that amount.

A buyer can accept an initial ask, or a seller can accept an initial bid. The bids and asks can be seen on the right hand corner of the screen. Your submitted asks are in the lower right hand corner along with the identity of the buyers to whom they are offered. The bids that have been offered to you by various buyers can be seen in the upper right hand corner along with the identity of buyer making the offer. **As a seller**, you accept a bid by highlighting the bid you wish to accept with your mouse and then pressing the “sell” button. If neither an initial bid nor an ask is accepted, a buyer may increase its standing bid and/or a seller may decrease its standing offer. A buyer’s revised bid must exceed its standing bid to that seller, while a seller’s revised offer must be lower than its standing ask to that buyer. **As** long as the period is open, participants are allowed to submit as many bids and asks as they like. If either side accepts one of the bids or asks, the two participants complete a trade at the designated price and should record the trade on their record sheet. Once you have traded with a particular **seller** in a period, you may not trade with that seller again during this period.

Information on completed trades can be seen in the upper center portion of the screen and in the lower left hand corner of the screen. The upper center portion reports the most recent trade you have completed and the lower left hand corner shows all trades this period. It is important for you to pay attention to these screens as a buyer may accept one of your asks resulting in a trade with you.

To make sure you understand the instructions, please complete the following exercise. Once you are finished (or if you have a question), raise your hand and someone will come by to help you.

Consider the following customer, third party payment, and fixed cost information.

Trading Period	Trade	Buyer	Customers	Price Per Customer	Trade Price	+ Third Party	= Earnings
1	1	7	30			10	
	2	9	20			9	
	3	5	10			5	
	- Fixed Costs						- 150
	TOTAL						

1. Suppose you submitted an ask of **6.0** per customer to Buyer 9. If that ask was accepted, what would your earnings be on the trade?
2. If that was your only trade, what would be your total profits?
3. Suppose Buyer 7 offered a bid of 3.0 per customer to you. If you accepted the bid, what would be your earnings on the trade?
4. If Buyer 7's resale value was 125, what would be Buyer 8's earnings on the trade?
5. Suppose Buyer 5 offered a bid of 2.0 per customer to you. If you accepted the bid, would you have to re-calculate your earnings on your trade with Buyer 7?
6. What would be your revised earnings from a trade with Buyer 7?
7. How many times may you trade with each buyer in a period?

RAISE YOUR HAND WHEN FINISHED.



**Period zero will be a practice period. You will receive no earnings for this practice period. If you have any questions, please raise your hand and I will come by to answer your question(s).**

**Are there any questions?**

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